Mapping Renewal:Digitization and Georeferencing Visual Artifacts of Urban Renewal on Segregation

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Overview of the Project Goals

The Mapping Renewal pilot project brought together humanities scholars and technical specialists focused on creating access to and providing context for spatial segregation and urban renewal in the city of Little Rock, Arkansas. This project engaged scholars, educators, and the general public through the digitization of maps, architectural drawings, reports, and related architectural photographs. The project addressed important questions, such as, “What are the political, social, and economic effects of the growth of cities? How and why do cities change over time? How does the built environment shape the history and reflect the geography of a place?” by creating a virtual collection, ontology, and access interface related to "spatial segregation" with meta- and geodata for broad dissemination to a variety of audiences.

Summary Statement Project Outcomes

This project resulted in several products: a tested workflow for digitizing, geocoding, describing, and making available a large amount of material in a virtual collection; new controlled vocabulary terms added to our existing controlled vocabularies; an ontology specific to the needs of researchers in urban history; increased availability of additional digitized primary resource materials; archetypal descriptions of our three target audiences (as a result of the reports from focus groups and usability testing); and a beta version of a project website with specific interfaces designed for each audience. Ultimately, we developed this white paper that

explores the lessons learned in developing these products, that defines the newly-developed ontology, and that records the input from the advisors who are experts in their fields.
The white paper will guide our work on the larger initiative and, we hope, inform the work of other repositories handling urban history primary source materials.

Lessons Learned

The Mapping Renewal 18-month pilot helped us understand the processes, expertise, and infrastructure necessary for this project to succeed. We anticipated some of these challenges, while others were unforeseen. As our partnerships grew, we organized regular meetings, with one group consisting of the UA Little Rock Center for Arkansas History and Culture (CAHC) employees and then a larger group consisting of both the Arkansas Economic Development Institute and their GIS specialists with the Center. During the course of the project, we thoroughly documented our decisions and goals, which we recorded in meeting minutes. From these experiences, we reflected on what we learned from each of the project outcomes.

What Went as Expected

Selection Criteria for Archival Materials

For the grant, we outlined that ten percent of the materials from our chosen collections would be digitized. One of our first tasks was to narrow what to digitize by developing and defining selection criteria to guide us in our selection. We worked with our scholar focus group and our humanities advisory group to accomplish this task.

In June 2018, we circulated a proposed set of criteria to our humanities advisory group (see Appendix 1) and invited their input. They suggested additional criteria and edits to some of our phrasing and definitions in our proposal. We then sent a revised version, which received approval from the group (see Appendix 2). An advisory group suggestion that we make available a list of related materials that we did not digitize for the pilot be included on the website. Because of the nature of the collections we chose, the diversity of documents types was limited. When we pursue the implementation grant, we will be more cognizant of selecting a variety of formats to include audio and video.

Even with this defined set of criteria, we still had a large pool of potential material to digitize that would far exceed the ten percent originally proposed. During our focus group meeting with scholars in September 2018, we invited their input. They suggested introducing a limiter based on the date. They proposed a beginning date of 1954 – when the Supreme Court ruled that segregated public schools were unconstitutional in Brown versus the Board of Education – and ending in 1989. Using these parameters, we were able to limit our digitization to ten percent.

Digitization

Digitization proceeded on target with some adjustments. Using the selection criteria, the Multimedia Archivist designated what would be digitized for the project and created a master spreadsheet of items to be digitized. Instead of hiring one hourly student assistant for two semesters, we hired two hourly student assistants for one semester. This change helped us better maintain the original timeline vision, because of the later start date for the grant and a change in personnel. The Multimedia Archivist trained the student workers on the Center's digitization guidelines, which is based on national standards.

The bulk of the materials digitized were photographic negatives. The rate of digitization was three to four minutes per item, which included loading the items into a special tray for negatives, running the scanning software, naming the item, and saving the item. The total items digitized for this project were 5,165. Metroplan reports and maps were digitized prior to the grant. Adding these items, and the total amount of digital assets was 5,896.

Both students were later hired as graduate assistants, with one hired specifically for the NEH-funded graduate assistantship. Their experience in digitization gave both students expertise in handling and digitizing archival material.

Metadata

CAHC used the international standard Qualified Dublin Core for metadata creation. Qualified Dublin Core is a widely accepted standard and flexible enough to describe a dynamic range of archival materials in ways that are adjustable to a variety of audiences. This standard also allows us to easily propagate metadata to other library systems.

The Qualified Dublin Core fields chosen included title, subject, description, creator, publisher, date, type, digital format, identifier, rights, date digitized, collection, and location. These fields

allowed us to record essential description and preservation information without being cumbersome on the users' end.

It took approximately three minutes to create metadata for each item. This rate was much faster than we anticipated even though we strategized how to most expediently create metadata. Any fields using duplicate content (e.g., rights, digital format, type) were auto-generated with standardized text. Content for the title and description were extracted and modified from the finding aid to include more detail appropriate for the digitized item. Subject headings were the most time-consuming to devise, and the Multimedia Archivist revised and added terms during the quality checking process.

Originally, we envisioned the graduate assistantship to be largely focused on metadata creation. When our graduate assistant completed her task, we were able to expand the assistantship to include the creation of StoryMaps (see section on StoryMaps).

The Multimedia Archivist quality checked and edited the metadata. All of the metadata created were uploaded into our online catalog. We then worked with the GIS department on transferring the digital assets and their metadata to them. We adapted the metadata to better fit their online platform and based on focus group feedback. Please see the section on transferring the metadata to GIS for more detail.

Focus Groups

We identified three audiences to target for the Mapping Renewal beta website. We held multiple focus groups for each one of these audiences. Our goal was to design a website that meets the needs of each one of these groups. A major task was to study how each group uses different vocabularies to help us create an ontology that's helpful to each of the three groups. To assess these differences, we developed activities and/or held discussions.

Public

The first meeting was held at Stone's Throw Brewing in May 2018. During a historical-based trivia night, organizers passed around binders of photographs from a collection included in this grant. Participants were asked to devise keywords for the photographs and tag them using sticky notes.

This activity revealed what is notable to the public when confronted with historic photographs and what words they use when describing photographs. Without any description to prompt them, they tended to focus on guessing the type of building (e.g., office, factory), describing people's clothes and potential professions, and describing any action in the photo.

In November 2018, the Center set up a booth at HarvestFest, an annual festival that takes place in the Hillcrest neighborhood. Center volunteers asked the public to tag local photographs and maps with sticky notes. This activity reinforced how the public views and describes photographs and maps. Contributors to the map tended to try and pinpoint where their residence is located on a map. For the historic photos, people tended to describe what was presently located there instead of focusing on the past.

Finally, in October 2019, the Center again hosted a booth at HarvestFest, and this activity focused on a single map. Participants were asked to draw the boundaries of the Hillcrest neighborhood. This activity exposed different views on how individuals define their neighborhoods. A number of insightful conversations occurred about the topic, including a particularly interesting interaction with a professor from the University of Central Arkansas on the concept of "mind maps" and how people mentally construct borders.

Teachers

To understand needs from teachers, two activities were held at the Little Rock School District Instructional Resource Center. During the first visit in September 2018, teachers were asked to tag maps with keywords. This activity revealed what stood out most to teachers about local maps. Featured prominently in the ensuing discussion was the before and after the impact of I-630, an interstate that bisects Little Rock. For our second visit in May 2019, the Center developed an activity with photographs from the collection. Teachers were asked to guess and match the photographs' locations to pinpoints on a map. This activity led to understanding how well teachers knew Little Rock's landscape and neighborhoods. The third activity was at the UA Little Rock Social Studies Alumni Panel in December 2019, which included teachers in the field and those in training. The Center presented the beta website and provided a survey with questions to solicit feedback. Responses informed the Center on how to improve the website's accessibility and explored the ways a teacher might use the site to engage students on humanities questions. (see Appendix 3**)**

Scholars

The first meeting with scholars was in September 2018. The discussion focused on how to narrow our selection of materials to ten percent as well as which potential resources might be used to develop an ontology. One scholar shared his list of helpful words used when conducting research. For the second meeting in November 2019, the beta website was demonstrated and scholars gave further suggestions concerning how to develop an ontology that used conceptual terms rather than topical terms. This additional approach could make it easier to address humanities questions, such as understanding the effects of federal urban renewal programs in a mid-size city.

In addition to these focus groups, city employees were invited to a meeting to gather website feedback. They provided valuable insight, including what types of city records exist (or do not exist) that could supplement future projects. They also pointed out that neighborhood data is difficult to define because of varying definitions of neighborhoods among people.

What Went Surprisingly Well

StoryMaps

The Center employed a graduate assistant who was responsible for creating metadata for all the digital assets. Once this work was completed, she was assigned to write narratives based on the digitized materials to prompt discussion of the humanities questions identified in the grant.

These humanities questions included, for example, what were the effects of federal urban renewal programs in a mid-size city and how does desegregation affect a city's development. Discussions with scholars and the humanities advisors led to an exploration of these questions through three stories: interstate construction, urban renewal programs, and school segregation.

The stories were created with ArcGIS StoryMaps. The AEDI had a paid subscription for this service, which enabled our access to this software. ArcGIS StoryMaps is a web-based software that provides a variety of templates allowing users to embed images and maps alongside a text narrative. Readers scroll to advance the story against a backdrop of maps and photographs.

Content to create the StoryMaps was already available. The graduate assistant used previously written blog articles and adapted them into fuller, richer narratives. The maps and photographs

featured in the StoryMaps were part of the geo-referenced collections included in the Mapping Renewal beta website.

The StoryMaps particularly helped in our goal of providing an interface that appeals to teachers and the public. Users of the beta website who have no context of urban renewal or segregation in Little Rock can navigate to the StoryMaps page (https://mappingrenewal.ualr.edu/stories) to understand these concepts. Scholars can use StoryMaps as a method of understanding what kind of primary materials the beta website offers and what they can expect to access.

The scholars and humanities advisory board responded positively to the StoryMaps. They emphasized that the intellectual content alongside the visual materials made the stories compelling for a variety of audiences. They suggested that geo-referenced materials in the Mapping Renewal database be linked to StoryMaps in which they are included. They also were interested in our creating a space where students could potentially make their own StoryMaps.

Transfer of metadata to GIS specialists

The team worked with AEDI on how best to transfer the available metadata. The IT Project Specialist set up a file transfer protocol (FTP) server so that we could transfer items and metadata to the AEDI. Metadata was saved as .txt files, and each digital item was given a unique identifier that linked it to its appropriate metadata.

Because both disciplines were familiar with metadata principles, the team was able to do efficient transfers and quickly fix problems as they arose. Such problems included finding and fixing duplicate identifiers and removing metadata for deleted items (these items did not have identifiable addresses and thus could not be included on the map). AEDI identified those errors and the Multimedia Archivist quickly fixed them based on this information.

We also worked with the AEDI on what metadata should be included in the database. We eliminated technical metadata fields since these were recorded in our own system. We narrowed the metadata fields to title, subject, description, identifier, city, county, and year. While all of the materials in this pilot grant phase came from Little Rock in Pulaski County, we anticipate possibly broadening our geographic scope in the future. Additionally, we learned of the database's constraints for a full-text field and character limits. In the future, we may potentially work around these constraints to provide for richer searching.

On the beta website interface, we worked together with the AEDI on how the metadata would appear to the user. We decided that the search results would display minimal metadata: title, year, and thumbnail. Should the user be interested in more information, they can click on the thumbnail and retrieve a larger image with complete metadata.

Geocoding/Georeferencing

In the grant, we included the need for a GIS specialist to do the geo-coding and geo-locating of archival materials. To accomplish this task, we worked with the AEDI and selected one of their GIS specialists to work on this project part-time.

We created a timeline of deadlines to keep the project on track. For ease of geo-locating we packaged architectural drawings and photographs by their respective address. Following this method, the GIS specialist would not have to search for the item's location in the metadata.

Through the course of our work, we learned that we needed the involvement of additional AEDI employees for this project to move forward and receive priority. Without the AEDI's support and their commitment to project goals, the needs of the project would remain unmet.

In addition, we learned that we not only needed GIS specialists support in geo-coding and geo-locating material, but we also needed skilled programming and database design to make the georeferenced materials available.

Once we formed a more robust partnership with the AEDI, we were able to schedule regular meetings and access all of the expertise required to make this project a reality.

Blog Posts

The CAHC created blogs for a few complex projects in the past, but none were as successful as the Mapping Renewal blog (https://ualrexhibits.org/mappingblog). Multimedia Archivist Shannan Lausch and graduate student assistants Acadia Roher and Andrew McClain wrote ten posts from June 2018 to October 2019 on project events and updates, and composed researched articles on topics related to the project. With just shy of 5,000 pageviews total, the most popular post titled "Fleeing Downtown: White Western Suburbs" (https://ualrexhibits.org/mappingblog/2019/07/01/fleeing-downtown-white-western-suburbs/) received over 2,000 pageviews thanks to the CAHC's steadily growing Facebook page, a

feature in an *Arkansas Times* article (https://arktimes.com/arkansas-blog/2019/07/06/white-flight-in-little-rock-the-more-things-change), and a Twitter post (https://twitter.com/xjelliott/status/1147387521644601346) by Joyce Elliott, a member of the Arkansas State Senate. See the Mapping Renewal Blog analytics report (see Appendix 4) in the appendices for a more detailed view of these numbers.

Teaching with Primary Sources (Midwest Region)

In addition to the blog, the School Desegregation source set (https://ualrexhibits.org/primarysources/primary-source-set/school-desegregation/), which features materials digitized with the NEH funding for the Mapping Renewal project, on the CAHC's Arkansas Primary Source Sets website received 227 pageviews. This database of source sets helps educators use historical inquiry to meet Arkansas frameworks in social studies and disciplinary literacy in grades K-12. See the source set's analytics report (see Appendix 5) for a more detailed view of these numbers.

It was clear from the success of the blog and the School Desegregation primary source set that there was a public interest in the project and in the topics covered by Mapping Renewal, as twenty percent of users were referred via an *Arkansas Times* article. The analytics reports additionally show that our efforts to publicize the project via social media were fruitful, as roughly seventy percent of users were referred to the blog via Facebook.

What Became a Challenge

Website development and design

The original plan of using WordPress to develop and design the beta website was reconsidered when it became evident that our desired customization would require building it ourselves. With that decision, we had to re-evaluate the labor and infrastructure needs of the project and the resources available. As the project was well underway by this point, it was preferable to work with people already familiar with the project. We proposed to expand the AEDI's involvement in the project beyond geocoding to the full development of the beta website. AEDI agreed to build the infrastructure (stack), program the site, and develop the database.

A few additional challenges remained, however, in particular, the absence of a web designer/front-end developer and a quickly approaching deadline to create a functioning beta website with enough time to conduct user testing. We reached out to the Chair of the UALR Art and Design department and a faculty member in the Computer Science department. In three weeks, they designed a mockup of the interface and built a base front-end of the site.

User testing

As AEDI worked to put together all of the beta website's many parts, user testing through the UA Little Rock Little Department of Rhetoric and Writing's Contemporary Rhetorics and User Experience Research and Design Lab (CRUX) was conducted. With the beta website in active development, however, user testing efforts were complicated. The user experience methodology was more complex than we anticipated, recruitment of participants more time consuming, and the value CRUX brought to the project was more than we expected. We should have allotted more time to this part of the project. (For the full report of the user testing results, see Appendix 6).

Ontology

The Center relies on the Library of Congress Subject Headings for descriptions of digitized materials. To increase the accessibility of digitized materials for this project to all three of our identified audiences, we sought to develop an ontology focused on urban history, urban renewal, and the built environment.

In our planning, we have found existing ontologies to be insufficient. For this project, we investigated how to enhance our description and search terms by collaborating with scholars, educators, and the general public. We held focus groups to develop an ontology for searching these collections based on the needs and terms of scholars, educators, and the general public.

The focus groups for the public revealed that they were interested in searching primarily by topical search terms. Teachers and scholars preferred more conceptual searching. One scholar shared his list of keyword terms. We also met with the humanities advisory board to seek their advice in developing such an ontology. They initially were more concerned with developing

other search features, e.g., a timeline, than suggesting what keywords should be included in an ontology.

Once the beta website was created, we again solicited feedback about what keywords would be most useful. When we demonstrated the beta website, the humanities advisory board gave greater attention to the need for an ontology. They emphasized the need for the ontology to consist of conceptual terms rather than topical terms (e.g., white flight). While conceptual terms may be difficult to apply to a single item (for example, an image of a new residence or highway), they suggested to group items with a conceptual term to better visually illustrate the concept at play. This additional approach could make it easier to address humanities questions, such as understanding the effects of federal urban renewal programs in a mid-size city. (see Appendix 7)

What Was Most Difficult

Adding Advanced Features to The Website

At the beginning of our collaboration with the AEDI, we provided a list of desired features for the website based on research into similar project websites. While at its core the main feature of the site is the ability to view historical objects spatially, a number of tools would assist a user in exploring the content in unique ways. Features like a timeline, layering capabilities, and the ability to download full-resolution images would greatly enhance the user experience. Due to the absence of a web designer, however, only preliminary versions of these features have been implemented to date. We plan to focus on advanced features during the next phase.

Solutions

Despite the various challenges we faced over the course of the project, we successfully found solutions to the majority. The following four examples demonstrate solutions at the broader level and how they ultimately assisted us in overcoming smaller obstacles.

Maintaining Clear Processes

By maintaining clear processes we were able to track our work at all stages of the project. When an issue arose we were able to address it because of our structured approach to the work. We utilized the Center's Digitization Manual to create the workflows used to digitize the project's archival materials. The manual provides instructions for operating flatbed scanners and an overhead scanner, scanning and image editing software, and implementing our file-naming standards. Additionally, the Center's Collections Processing Manual guided us in archival standards for handling, describing, and uploading the archival materials to our online catalog. The description of each object was further supported by using our existing metadata templates, which provide instructions and definitions for creating metadata for archival materials. Lastly, our ongoing work with the AEDI was made especially streamlined through a File Transfer Protocol (FTP) connection that we used to share files.

Acknowledging Limits

A particularly important lesson we learned was the need to acknowledge our limits and, by doing so, be willing to work towards alternative solutions. Our willingness to adapt to our own limitations was tested when, in consultation with the AEDI developers, it became clear our plan to hire a Computer Science student to create the site would not be feasible, as the expertise required to build it was beyond that of a student. At this point, the AEDI volunteered their services to develop the site. In addition, while developing the ontology, we realized our vocabulary choices were greatly influenced and limited by our own perspectives. By reaching out to our audiences through multiple focus groups we were able to expand the perspective and vocabulary of the ontology.

Finding The Right Partners

We heavily utilized our connections to the UA Little Rock community to find the right partners for the project. Some partners we had worked with before, but the majority we had not. The Center's position in the institution, as part of the academic endeavor, places the associate provost and the Center staff in formal and informal arrangements with department leaders. Additionally, the Center has a reputation for collaboration and interdisciplinary work so overtures

to colleagues were well received. For example, when both the CAHC and AEDI had to acknowledge that outside help was needed, we turned to the UA Little Rock network and found an artist and a frontend developer who listened to our ideas and were able to quickly produce a product that fit the project's needs. We had similar success when it came to performing user testing and found a lab on campus built specifically for that purpose. This project opened opportunities for other Center projects and programs. All of our partners have asked to be included in the implementation grant proposal.

Making Collaboration Work

Collaboration was at the core of this project. It was what kept it moving forward, despite unexpected obstacles deadlines. With partners from different professional backgrounds working together, communication became the most important element of our success. Communication between various disciplines can often be difficult because language and vocabularies from disparate professions do not often translate well. However, the CAHC and AEDI were willing to listen, explain, and even teach each other to make our project better. This approach may have added time to some of our meetings, but it undoubtedly helped in moving the project forward.

Next Steps

The Pilot Project was to ensure that we had proven workflows and delivery methods for a larger project to create a corpus of easily accessible and reusable digital resources containing geographic, architectural, and photographic data that would allow scholars, educators, and the general public to interrogate the political, economic, and cultural effects of the growth of Little Rock on the urban environment and its populations. The Pilot Project was to address questions, such as, "What are the political, social, and economic effects of the growth of cities? How and why do cities change over time? How does the built environment shape the history and reflect the geography of a place?" The beta website, in the opinion of scholars and the advisory group, proved to be useful in its present form. Even with the use of only ten percent of the archival

material incorporated (as grant defined), we were encouraged to make the beta website available and to refine it as possible over time.

As we move forward with the larger project we will want to not only reflect on past experience but also we will want to deepen the relationships that we developed with partner organizations/departments and individuals as well as to investigate current theoretical and technical changes that have emerged since the Pilot Project was initiated. These next steps will include the following tasks. We will want to refine the humanities focus of our project and more precisely consider the questions that we can address given the archival material that we (or partners) hold. Urban renewal activities in Little Rock, as elsewhere, had roots in race relations in the city/region and it had successor issues that we confront today. We will want to engage scholars in exploring these extended concerns. We also will want to look at these concerns relative to the design of the website. Discussions with our website developer led us to better understand the technical parameters that we face in making a complex site easily navigable for our various audiences. We will want to explore our technical options as we go forward. One of these technical considerations will be the cost of software and the need for significant data storage since we would like to incorporate more audio and video. Clearly, we will assess the archival material in our collections that most appropriately address the defined humanities questions, but we will explore related materials in other collections. For example, a number of scholars asked about school zone maps. These are available through the city and with our city partnership, we will have access to these holdings.

For any project of this magnitude, it is important to have the correct people and organizations involved. One of the most gratifying aspects of the Pilot Project is the number of partners we encountered. When confronted with our limitations to produce the type of website that we wanted, we reached out to the AEDI. We had been working with them on the geocoding part of the project but had limited our initial work to this aspect of the project. In discussing our interests for a more complex website than we were able to execute, AEDI offered to assist. We will want to continue this relationship into the larger project and involve them in a more integral fashion. Similarly, we “found” the CRUX Lab late in our Pilot Project when we decided that we wanted a more detailed focus group attention to the beta website. The experience yielded significant information and an introduction to the methodology of user experience that was valuable. We will want to explore a user experience plan and a methodology for implementation. Ongoing work with the CRUX Lab is desirable as we move to the next stage. Additionally, we realized

that we could benefit from a website designer. We were able to use the talents of the chair of our Department of Art and Design to create a mockup of the interface, but we would want to spend considerably more time making the finished product more engaging for our audiences. These individuals and groups added to our success in the Pilot phase. They represent the bringing together of archivists, scholars and technical people to address humanities questions. The right people with the right talents do make a difference.

We have confirmation that our national advisory group members would like to continue with the project. We welcome this continuity; however, we have added an advisor with expertise in digital preservation and digital humanities sustainability for the implementation proposal. Additionally, we may want to add a linguist since our focus group discussions with all groups revealed a more varied use of particular words and the implications of this usage for humanities questions. We also have decided that we would like a teacher advisory group as well as the one that we established with scholars. Several teachers, who were part of the focus groups, have already volunteered for this task.

We are eager to begin the next phase.

Appendices

Appendix 1: Original selection criteria

Appendix 2: Revised selection criteria

Appendix 3: Teacher feedback

Appendix 4: Mapping Renewal Blog analytics

Appendix 5: Teaching with Primary Sources analytics

Appendix 6: CRUX Mapping Renewal Usability report

Appendix 7: Additional ontologies

UA Little Rock Center for Arkansas History and Culture

NEH Humanities Collections and Reference Resources—Foundation Grant

MAPPING RENEWAL

Selection Criteria

The University of Arkansas at Little Rock Center for Arkansas History and Culture (CAHC) has been awarded a National Endowment for the Humanities grant from the Division of Preservation and Access. This Mapping Renewal *pilot project* will bring together humanities scholars and technical specialists focused on creating access to and providing context for spatial segregation and urban renewal in the city of Little Rock, Arkansas. This project will engage scholars, educators, and the public through the digitization of maps, architectural drawings, reports, and related architectural photographs. The project will address important questions, such as, "What are the political, social, and economic effects of the growth of cities? How and why do cities change over time? How does the built environment shape the history and reflect the geography of a place?", by creating a virtual collection, ontology, and access interface related to spatial segregation with meta- and geo-data for broad dissemination.

CAHC holds a robust range of archival collections from which to create a virtual collection focused on Little Rock's central core from 1900 to 1999 for the *pilot project*. Specific criteria related to spatial segregation issues in Little Rock will allow us to build a rich corpus comprising approximately 10 percent of the project's primary source material. This selected material will allow investigation of humanities-based questions that contribute to our understanding of the spatial segregation issues embedded in our cities. Criteria guiding selection include the following:

Schools: districts, zoning, buildings

Housing and Neighborhood patterns: urban renewal, public housing, new construction, occupancy data

Transportation: railways, streets, highways, waterways, and airports

Policy: city planning reports, ordinances, private/non-profit reports

Commercial Development: retail, zoning, new construction

Community Space: parks, recreation, biking, and pedestrian walkways

Utilities: waterworks, electricity, gas, and sewage systems

UA Little Rock Center for Arkansas History and Culture

NEH Humanities Collections and Reference Resources: Foundation Grant

MAPPING RENEWAL

Revised Selection Criteria

The University of Arkansas at Little Rock Center for Arkansas History and Culture (CAHC) has been awarded a National Endowment for the Humanities grant from the Division of Preservation and Access. This Mapping Renewal *pilot project* will bring together humanities scholars and technical specialists focused on creating access to and providing context for spatial, including racial, segregation and urban renewal in the city of Little Rock, Arkansas. This project will engage scholars, educators, and the public through the digitization of maps, architectural drawings, reports, and related photographs. The project will address important questions, such as, "What are the political, social, and economic effects of the growth of cities? How does the built environment shape the history and reflect the geography of a place? Why and how does racial distribution change over time?", by creating a virtual collection, ontology, and access interface related to spatial segregation with meta- and geo-data for broad dissemination.

CAHC holds a robust range of archival collections from which to create a virtual collection focused on Little Rock's central core for the *pilot project*. Specific criteria related to spatial segregation issues in Little Rock will allow us to build a rich corpus comprising approximately 10 percent of the project's primary source material. This selected material will allow investigation of humanities-based questions that contribute to our understanding of the spatial segregation issues embedded in our cities. Criteria guiding selection include the following:

Schools: districts, zoning, buildings

Housing and neighborhood patterns: urban renewal, public housing, new construction, occupancy data

Population: racial distribution, census data

Transportation: public transportation, railways, streets, highways, waterways, and airports

Policy: city planning reports, ordinances, private/non-profit reports

Commercial Development: retail, zoning, new construction

Workplaces: offices, factories, industrial/light industrial spaces, service economy

Cultural Spaces: theaters, clubs, cultural centers, places of worship

Community Space: community centers, parks, recreation, biking, and pedestrian walkways

Utilities: waterworks, electricity, gas, and sewage systems

Teacher Feedback: NEH Beta Website
December, 2019

Humanities Questions

Q1: Why would you use this website?

Teacher responses:

- Help to show students how cities change and, effects of policy/legislation and population increase/decrease in city.
- Incorporation into lessons for histories of battles, migrations, etc.
- Show students change over time, analyze what factors caused the changes (e.g. social, racial, political).
- If I wanted to find the history of a particular building or area. If I wanted to see the historical geography of an area.
- To have students navigate through - Scavenger Hunt. The locality makes intriguing to see what history happened near me.
- If wanted to view a detailed map.
- Primary source supplement with lesson planning. Urban renewal/segregation topics.
- Could be used for Time and change after a certain period.
- See how environment and geography has changed over time by layering maps. Looking at the map of each place to see the story.
- Research about the city (i.e. social, political, and economic growth).

Q2: What questions would you be exploring?

Teacher responses:

- Develop more about outer areas - annexed areas. Projections of future areas of development.
- How have populations, geographies, changed over time? Why did these events happen?
- What social factors caused the changes to occur.
- What did Arkansas/Little Rock look like in the 1800s? What is the historical relevance of this building?
- How do rural areas shift to urban? How do environments change?
- What is the city growth from 1975 to 2019.
- Compare/Contrast Little Rock, especially during Civil Rights, the Little Rock Nine.
- How population has changed and moved over time.
- How do cities change over time, and why.

Q3: How would this website help explore these questions?

Teacher responses:

- Need more time.
- The timeline and stories.
- You can actually see the changes, but it may not actually explain the social factors, may have to be inferred.
- It seems that the map shown in the presentation would answer my questions.
- We could use this website for primary sources and I like how we can.
- By using a layered map.
- Storymap: Expansion or Segregation. Perfect! Want more of this!
- Layering the maps with census information.
- You can view how the city changed over time.

Q4: What is missing from the site?

Teacher responses:

- No direction. Just maps.
- Accessibility tools, student-generation.
- Census data. How is the website accessed, is it accessible at home, phone, etc.
- Maybe a how-to-video or something to show how the site works.
- Detailed captions on the pictures.
- Maybe audio clips or videos would be a cool addition.
- School zone maps.
- Pre-made thematic panels.
- Tie in somehow with American history.
- Expansion beyond Little Rock.
- Demographics/Population. Some kind of legend for the symbols.

Q5: What additional information might be included?

Teacher responses:

- Neighborhood associations, political campaign events, and voting records.
- Maybe N. Little Rock, more information added.
- Videos in the map would be interesting.
- I would like to see a story map for Little Rock's 9th St. and how it has changed.
- Stories from veterans.
- Demographics/Population.

Website Functionality

Q1: What do you like and dislike about the website?

Teacher responses:

- Photo is too big. Instead of splash page, start with stories to drive peoples attention and inspire more/deeper searching.
- I really like the concept.
- Like: The ease of operation, pictures, data, maps, clarity and honesty of information, and videos.
- I like the photos and PDF shown on the certain places.
- I like the map overlays and the icons showing where the pictures relate.
- The interface reminds me of Zillow. The zoom function is neat.
- A large variety of detailed maps.
- Would like more topic options. Excludes N. Little Rock. Would like interviews incorporated.
- I like the timeline and changes of neighborhood.
- Search functionality seems easy and interesting.
- Photos are nice. I like the ability to compare the city as it changes over time.

Q2: What terms/words/concepts would your students or you want available to search by?

Teacher responses:

- Students would want video and audio.
- Thematic: segregation, white flight, blight, urban revival, gentrification; Literal: lake, creek, river, bayou, airport.
- Legislation, white flight, Black district, green book
- Schools, capital building, Little Rock Nine, Civil War, segregation
- City name, names of buildings, street names.
- Segregation, school zone, race.
- Maybe search by building or structure.

Q3: How should search terms by displayed? Options on a list? Most Searched? Open? All?

Teacher responses:

- "Folder" structure, drop-down, suggester terms (w/live search).

- Open.
- I think option on a list would be a good.
- Divide by decade. Lists.
- Most searched.
- A list of Most Searched would be a good idea, so that you can easily see what everyone is searching.
- I think the way they are is fine.

Q4: What do you think about the StoryMap: Expansion or Segregation? Could you use this in a classroom?

Teacher responses:

- Yes. I would be interested in putting a Story Map together for Broadmoor neighborhood.
- Yes.
- Definitely think this can be used in a classroom.
- The Story Map on I-630.
- Could use this in a classroom.
- Yes. Would love to use it during the segregation unit!
- I like the Story Map. I could use it within American history.
- Is interesting to see what areas have been impacted the most by segregation.
- I think I could use this in a classroom. I'd at least be willing to, although it's kind of high-level.

Q5: Other concerns or observations?

Teacher responses:

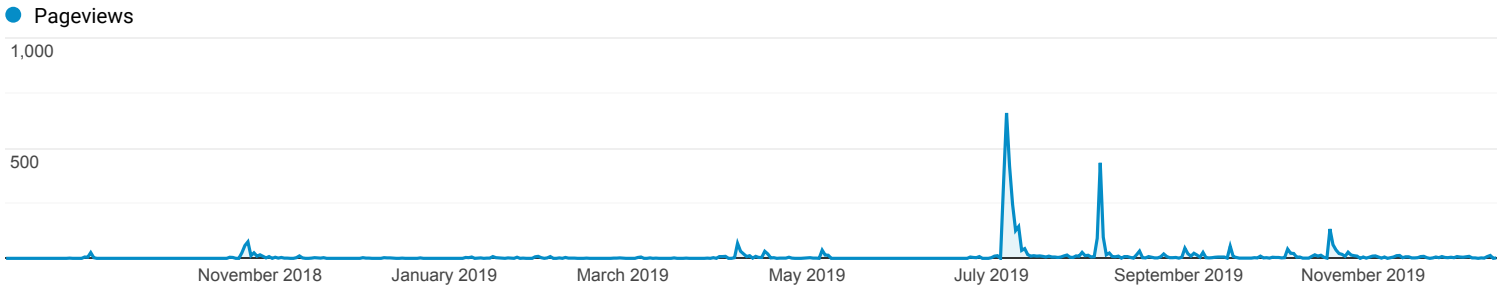
- Could students create customized "pins" to develop their own story? Students do not always have access to save information.
- It would be really cool to host documentaries spatially.
- I like the idea of being able to pin and create your own stories with the maps.
- For students who are blind and visually impaired, it needs to be JAWS accessible. Can it be JAWS or screen reader accessible, or a transcript?
- The download button or share function would be a great idea.
- Much prefer the Story Map to searching. My students probably couldn't handle researching without it.
- Love how you can see the full description of the photo you're looking at.

Pages

All Users
100.00% Pageviews

Aug 9, 2018 - Dec 15, 2019

Explorer



Page Title	Pageviews	Unique Pageviews	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
	4,902 % of Total: 100.00% (4,902)	**4,218** % of Total: 100.00% (4,218)	**00:03:28** Avg for View: 00:03:28 (0.00%)	**3,250** % of Total: 100.00% (3,250)	**77.82%** Avg for View: 77.82% (0.00%)	**66.30%** Avg for View: 66.30% (0.00%)	**$0.00** % of Total: 0.00% ($0.00)
1. Fleeing Downtown: White Western Suburbs – Mapping Renewal NEH Project Blog	**2,076** (42.35%)	1,834 (43.48%)	00:04:50	1,718 (52.86%)	82.14%	78.66%	$0.00 (0.00%)
2. West Rock to East: Housing Segregation during Urban Renewal – Mapping Renewal NEH Project Blog	**548** (11.18%)	434 (10.29%)	00:03:27	351 (10.80%)	75.50%	66.61%	$0.00 (0.00%)
3. Mass displacement at Granite Mountain – Mapping Renewal NEH Project Blog	**527** (10.75%)	458 (10.86%)	00:04:12	357 (10.98%)	81.51%	71.16%	$0.00 (0.00%)
4. Town and Country: Westward Sprawl in Little Rock (Part II) – Mapping Renewal NEH Project Blog	**428** (8.73%)	364 (8.63%)	00:03:32	277 (8.52%)	68.23%	56.54%	$0.00 (0.00%)
5. Town and Country: Westward Sprawl in Little Rock (Part I) – Mapping Renewal NEH Project Blog	**304** (6.20%)	269 (6.38%)	00:03:13	94 (2.89%)	70.21%	43.75%	$0.00 (0.00%)
6. Mapping Renewal NEH Project Blog – UA Little Rock Center for Arkansas History and Culture	**255** (5.20%)	217 (5.14%)	00:03:09	212 (6.52%)	74.53%	71.76%	$0.00 (0.00%)
7. Mapping Renewal NEH Project Blog – UA at Little Rock Center for Arkansas History and Culture	**199** (4.06%)	151 (3.58%)	00:02:02	104 (3.20%)	41.35%	39.70%	$0.00 (0.00%)
8. Collection highlight: Metroplan records – Mapping Renewal NEH Project Blog	**97** (1.98%)	84 (1.99%)	00:02:17	9 (0.28%)	66.67%	27.84%	$0.00 (0.00%)
9. Segregated Neighborhoods, Segregated Schools – Mapping Renewal NEH Project Blog	**95** (1.94%)	76 (1.80%)	00:04:47	40 (1.23%)	75.00%	52.63%	$0.00 (0.00%)
10. #Hyping Hillcrest History with Hashtags – Mapping Renewal NEH Project Blog	**87** (1.77%)	80 (1.90%)	00:01:53	6 (0.18%)	66.67%	36.78%	$0.00 (0.00%)
11. Arthur Ashe, Winthrop Rockefeller, and the struggle for civil rights – Mapping Renewal NEH Project Blog	**79** (1.61%)	74 (1.75%)	00:06:11	57 (1.75%)	92.98%	84.81%	$0.00 (0.00%)
12. atroher – Mapping Renewal NEH Project Blog	**30** (0.61%)	26 (0.62%)	00:00:29	7 (0.22%)	71.43%	40.00%	$0.00 (0.00%)
13. Trivia with a twist – Mapping Renewal NEH Project Blog	**29** (0.59%)	27 (0.64%)	00:01:19	1 (0.03%)	100.00%	44.83%	$0.00 (0.00%)
14. June 2018 – Mapping Renewal NEH Project Blog	**23** (0.47%)	22 (0.52%)	00:00:12	3 (0.09%)	66.67%	34.78%	$0.00 (0.00%)
15. July 2019 – Mapping Renewal NEH Project Blog	**20** (0.41%)	19 (0.45%)	00:00:12	0 (0.00%)	0.00%	15.00%	$0.00 (0.00%)
16. June 2019 – Mapping Renewal NEH Project Blog	**13** (0.27%)	12 (0.28%)	00:00:22	1 (0.03%)	0.00%	46.15%	$0.00 (0.00%)
17. October 2018 – Mapping Renewal NEH Project Blog	**13** (0.27%)	13 (0.31%)	00:00:08	3 (0.09%)	33.33%	23.08%	$0.00 (0.00%)
18. August 2019 – Mapping Renewal NEH Project Blog	**9** (0.18%)	7 (0.17%)	00:01:01	0 (0.00%)	0.00%	33.33%	$0.00 (0.00%)
19. Hello world! – Mapping Renewal NEH Project Blog	**8** (0.16%)	2 (0.05%)	00:02:43	0 (0.00%)	0.00%	25.00%	$0.00 (0.00%)
20. November 2018 – Mapping Renewal NEH Project Blog	**8**	7	00:00:09	0	0.00%	0.00%	$0.00

	(0.16%)	(0.17%)		(0.00%)			(0.00%)
21. Page not found – Mapping Renewal NEH Project Blog	**8** **(0.16%)**	8 (0.19%)	00:02:26	4 (0.12%)	25.00%	62.50%	$0.00 (0.00%)
22. Acadia Roher – Mapping Renewal NEH Project Blog	**7** **(0.14%)**	4 (0.09%)	00:01:18	0 (0.00%)	0.00%	14.29%	$0.00 (0.00%)
23. April 2019 – Mapping Renewal NEH Project Blog	**7** **(0.14%)**	6 (0.14%)	00:00:25	1 (0.03%)	0.00%	14.29%	$0.00 (0.00%)
24. May 2019 – Mapping Renewal NEH Project Blog	**6** **(0.12%)**	6 (0.14%)	00:00:12	0 (0.00%)	0.00%	0.00%	$0.00 (0.00%)
25. October 2019 – Mapping Renewal NEH Project Blog	**4** **(0.08%)**	3 (0.07%)	00:00:57	0 (0.00%)	0.00%	25.00%	$0.00 (0.00%)

Rows 1 - 25 of 35

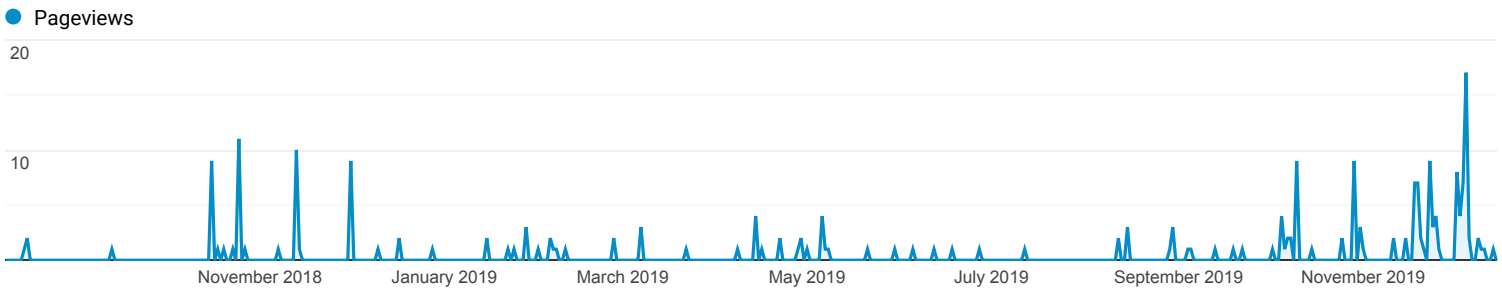
Pages

ALL » PAGE TITLE: School Desegregation - Arkansas Primary Source Sets

Aug 9, 2018 - Dec 15, 2019

All Users
1.30% Pageviews

Explorer



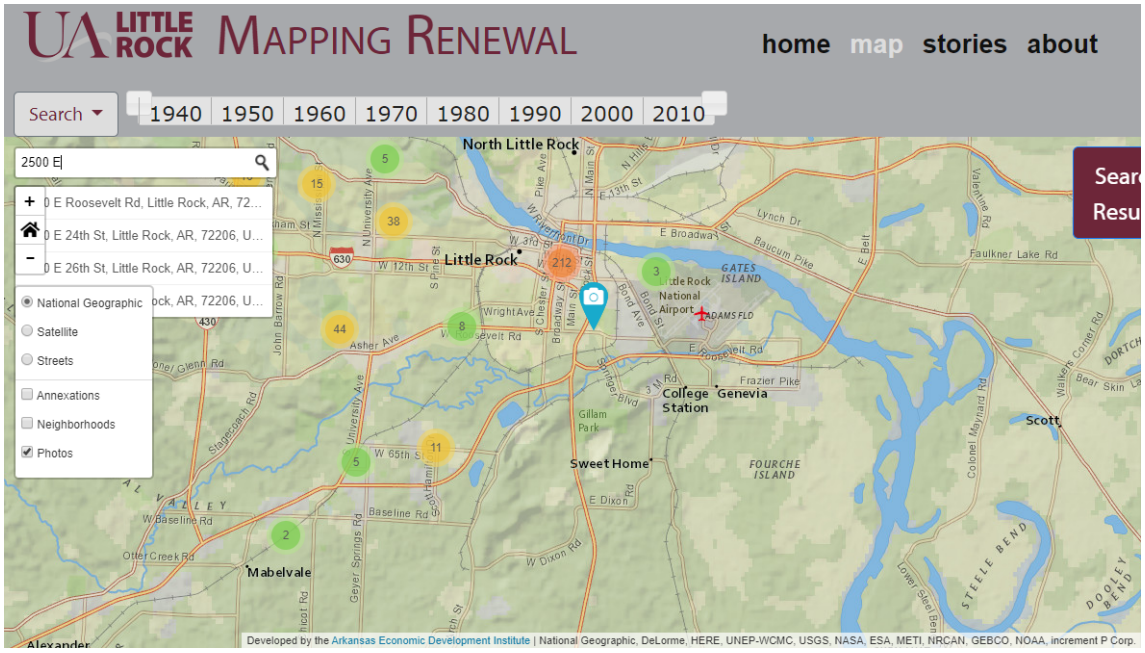
Page	Pageviews	Unique Pageviews	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
	227 % of Total: 1.30% (17,434)	**126** % of Total: 1.22% (10,338)	**00:00:46** Avg for View: 00:01:24 (-45.01%)	**90** % of Total: 1.58% (5,706)	**38.89%** Avg for View: 38.63% (0.66%)	**36.12%** Avg for View: 32.73% (10.37%)	**$0.00** % of Total: 0.00% ($0.00)
1. /primarysources/primary-source-set/school-desegregation/	**227** **(100.00%)**	126 (100.00%)	00:00:46	90 (100.00%)	38.89%	36.12%	$0.00 (0.00%)

Rows 1 - 1 of 1

Mapping Renewal Usability

A Report of Usability Findings in the Early Stage test
for the Mapping Renewal project

24 Oct 2019



Prepared by

Dr. Joyce Carter

a product of the University of Arkansas at Little Rock CRUX Lab

TABLE OF CONTENTS

INTRODUCTION

Between 18 October and 23 October 2019, staff in the UA Little Rock CRUX Lab observed 5 participants as they used the prototype of the Mapping Renewal (MR) project. This report outlines our findings, along with our testing strategies, assumptions, and techniques. By noting where users had problems, got confused, or did not understand the overall scheme for the redesign, we are able to suggest ways in which MR may modify its design to resolve problems and better meet the needs of the users.

FINDINGS

What's Working Well

As an early stage prototype, the Mapping Renewal project is surprisingly functional and moderately usable. Even though we note a number of usability problems below, our participants generally think that the project is exciting and valuable. It took far too much effort and explanation and trial-and-error to arrive at this appreciation, however, but that's precisely what user-experience research and design is meant to improve.

The Map. Most participants understand that they are looking at the Little Rock area and they also understand that they can view the map with different base maps. Almost all participants knew or figured out quickly how to enlarge the map (zoom) and to move by dragging the hand icon left, right, up, and down.

Usabilty Problems

Icons

Users relied on other frameworks to understand icons, and sometimes their frameworks were incorrect. For example, almost all my participants thought the magnifying glass (address search) icon meant to zoom, mostly because Adobe products use that icon to indicate zoom. No one used the "home" icon to return the map to its original size, using the mouse wheel or the + or – icons, instead. [minor]

The "Pin-drop-photograph" icon was interpreted by one participant as the location of cameras throughout the city instead of photographs. [moderate]

The "multiple photograph" blobs of red, yellow, and green were misinterpreted by 100% of our participants, some of whom never really understood what they were seeing. [severe]

Terminology

Fewer than half our participants knew what "annexation" meant. [severe]

Only one participant appreciated the "subject" and "collection" details in the Search Results fly-out window. [moderate]

No participants appreciated the difference in the National Geographic and the Streets sub-maps, pointing out they both offer more or less the same information. [minor]

Zone colors

As users were exploring the Annexations and Neighborhoods features, they all noted similar problems. [moderate]

First, most participants thought colors ought to be consistent in the Annexation layer, meaning that green would mean the same annexation date regardless of its location. But the choice of colors seems to be without meaning, aside from providing contrast with the adjacent segment.

Second, all participants were perplexed that the Neighborhoods layer had the opposite problem, i.e. no colors to distinguish between neighborhoods, with only a red line. While it may be desirable to facilitate questions like "when was the St. Charles neighborhood annexed?" by working with both layers, the usability of these map shadings remains a moderate-to-serious usability problem.

Third, the darker gray of the neighborhood layer is a mystery to all of our participants. They are not sure if this is meant to signal a different neighborhood or perhaps instead some sort of overlap of neighborhoods. In any case, this is a substantial usability problem.

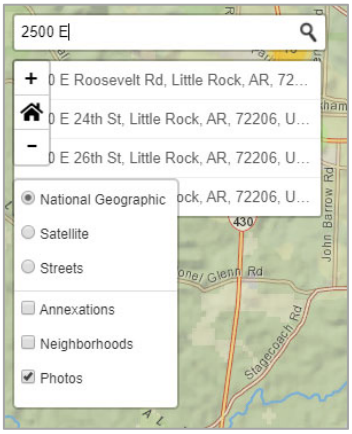
Zone information

Fully half of our participants had to try many different techniques to find out the name of an annexation or neighborhood. Clicking, to them, is a way of executing a command, and they noted that hovering over the zone might be better than requiring a mouse click.

Annex information is far too detailed (down to the time zone and time of day) while neighborhood information is quite minimal. The information in pop-up boxes should afford the user more or less the same volume of information, if possible.

Placement of navigation/search affordances

While it's perhaps useful to locate the + and – (zoom in and zoom out) and the map preference floating menus higher on the page, they interfere with the recommended address matches that pop down when users are typing addresses. In this example, the floating menus obscure the helpful information. [severe]



Two kinds of search

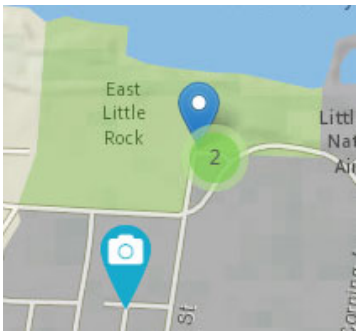
All participants were confused by the existence of two separate search mechanisms. Even if the two commands are pulling information from different locations (address database versus library archive database), users don't appreciate the distinction. [severe]

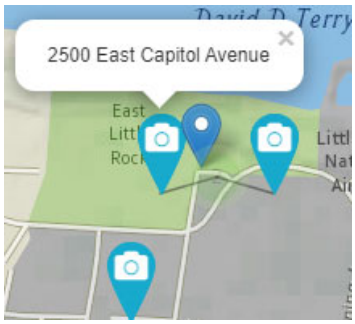
Address search limited by scope of map

Even when participants appreciated the address-searching capabilities of the magnifying glass icon, almost all were thwarted in searching for an address because the search function is apparently limited (filtered) by the map that is currently visible. This behavior led the majority of participants to think a) they had entered the address incorrectly or b) the address wasn't on the map. [severe]

Address results don't equal assets

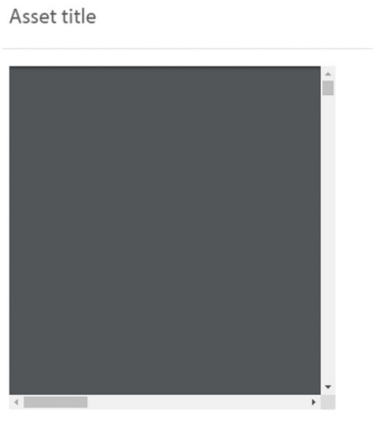
The result of an address search makes use of yet another icon, a fairly conventional "location" pin that appears in the map (assuming, per previous point) that the map is zoomed correctly. However, nearly all participants who were asked to find a photo of 2500 E. Capitol Ave, and who saw the left image below, failed to appreciate that a photo of that address was lurking just below the green 2. Only after they explored (those who did) the green blob and clicked on the camera icons did a couple of participants correctly complete the task (right image, below). Even those two participants wondered why the search didn't just highlight the camera icon since its location matched their search task. [moderate-to-severe]

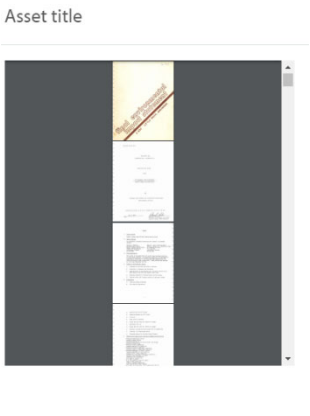




Search Detail Screen

One of our study's tasks was to find the Environmental Impact Statement for I-630. Every participant who found the pdf, and who was able to see the details page, was presented initially with an apparently blank screen (left). No one noticed the horizontal scroll bar, which is active because the document viewer has apparently adjusted for extra wide pages (center) hundreds of pages lower in the document. Perhaps the default view could be set to "Fit to Width" as a way of addressing this confusion (right). [serious]





Earlier versions of the prototype yielded a single image for a location, along with a "carousel slide-show" set of arrows to see all of the images. The latest prototype breaks out the photos as separate items in the search box, thus fixing what several participants described as a lot of confusion as to how many photos were under each camera icon. [moderate, if you return to carousel approach]

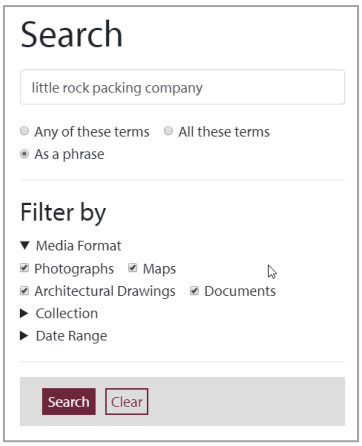
NOT TESTED

Timeline

The timeline-by-decade feature was not implemented in time for testing. The final participant was able to see the line and we had a general discussion about how it might work, but that discussion is not sufficient to draw any usability conclusions. As the project progresses, you might consider providing a historical basemap that corresponds to the selected timeframe. Further, it looks as if annexes and neighborhoods may also have appearance/disappearance features that are dependent on the selected timeframe. Given the confusion around those overlays in this first usability test, we need to continue working to discover a vocabulary of the screen that makes not only the annexes/neighborhoods understandable, but also the appearance or disappearance of these map areas through time.

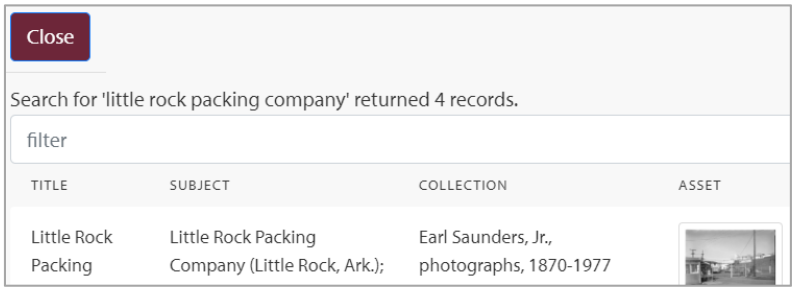
Filter by

One of our participants' tasks was to find photographs of a church, and about half of our participants tried to filter results in the pull-down Search box by media format (right). This seems like a very good idea, but the website froze and crashed every time we attempted this procedure. As a result, we have no data as to the usability of the filter, even though our users cognitively recognized the utility of such a filter.



Filter Search Results

Similarly, the "filter" box in the Search Results fly-out window (below) was not functional during the test. Unlike the bounded filter mentioned in the previous paragraph, users had cognitive difficulty in knowing just what one might type in this box in order to filter the results.

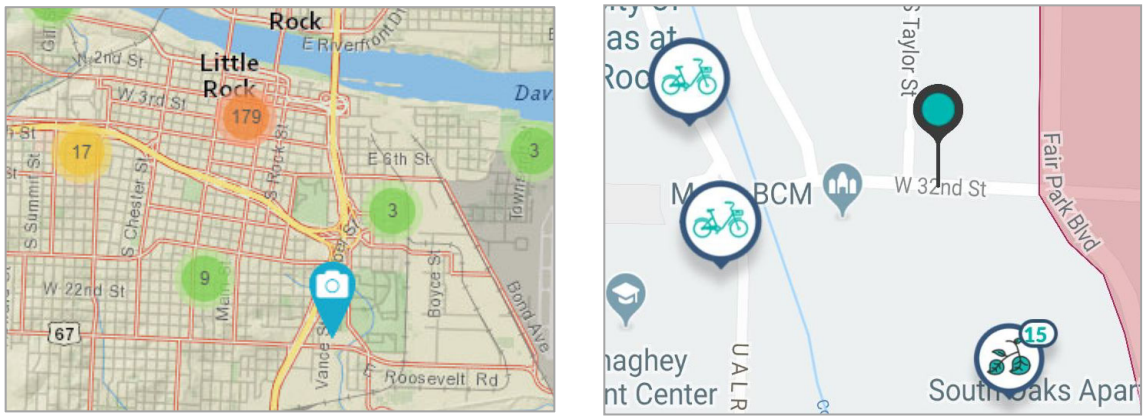


RECOMMENDATIONS

Iconography

While it's commendable to try to minimize what Edward Tufte calls "chart junk" by combining multiple "camera location pins" under colored blobs, it's clear that virtually no users actually understand what they are seeing. The following figure illustrates the problem. It's not clear that the location camera icon has anything to do with the green, yellow, or red blobs meant to signal that there are multiple pictures contained within.

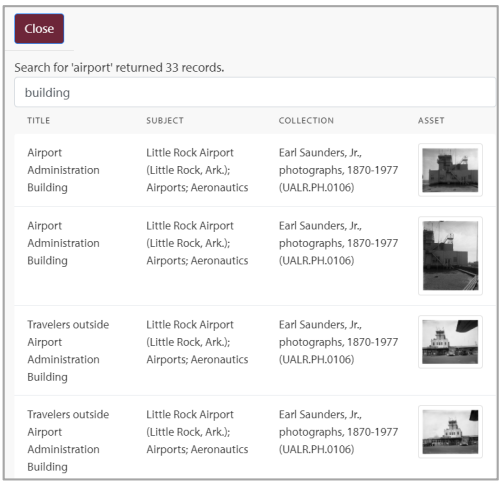
We would recommend working with a graphic designer to streamline all icons, including the camera icon, perhaps using a bike-sharing app's concept, where a single bike available for rent is indicated by a single bike, but where there are multiple ones (lower right), the bike icon is slightly different and contains a little number underneath.



Terminology

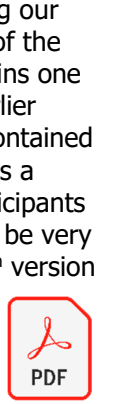
Most people know what "neighborhoods" are, but more than half of our participants did not know what "annexation" means. We could explore other terms, such as "City Growth," in future interfaces, to see if users have a better understanding.

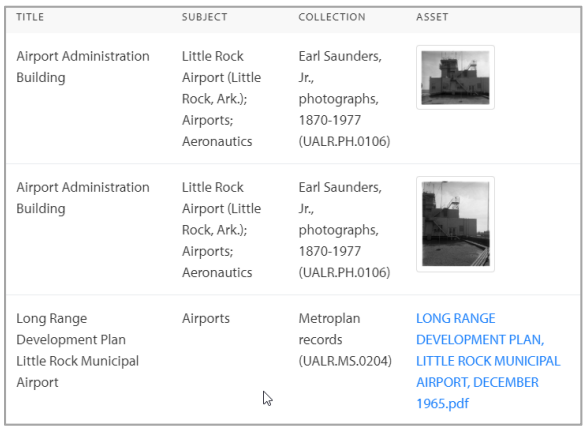
The search results screen contains language typical of libraries or collections (Title, Subject, Collection, Asset), but most participants did not appreciate the nuanced differences in this terminology. It might be clearer (as well as cleaner) to hide technical details until/unless the user wants them. Further testing of a broader user base might give us the terminology we could use. In this example (right), it might be more user-centered to simply say Airport Administration Building, date (participants wanted this) and the thumbnail, and omit the subject and collection until the user wants this information, perhaps with a checkbox at the top of the window saying something like "library information" or "collection information."



Consistency in viewing details

The project was modified several times during our testing, but one of the most recent versions of the search results fly-out window currently contains one of our participants' recommendations. In earlier versions of the project, the "Asset" column contained the filename of the photograph, sometimes as a hyperlink, and sometimes as mere text. Participants felt that thumbnails of the photograph would be very useful, and that's what we see in the Oct 24th version of the project. In keeping with this philosophy, it might be valuable to use a thumbnail of a PDF (from Adobe) instead of the long-ish filename for the document, as seen here.





TITLE	SUBJECT	COLLECTION	ASSET
Airport Administration Building	Little Rock Airport (Little Rock, Ark.); Airports; Aeronautics	Earl Saunders, Jr., photographs, 1870-1977 (UALR.PH.0106)	
Airport Administration Building	Little Rock Airport (Little Rock, Ark.); Airports; Aeronautics	Earl Saunders, Jr., photographs, 1870-1977 (UALR.PH.0106)	
Long Range Development Plan Little Rock Municipal Airport	Airports	Metroplan records (UALR.MS.0204)	LONG RANGE DEVELOPMENT PLAN, LITTLE ROCK MUNICIPAL AIRPORT, DECEMBER 1965.pdf

TESTING METHODS

The test plan for this early-stage usability test of the Mapping Renewal project focused on evaluating the performance of participants who were given tasks to accomplish using the MR website.

The test plan was developed in October 2019 to gauge user ability to use the map, understand its affordances, and find artifacts that the project provides. The final test plan is included as appendix C.

User Selection

For this test, sample users were selected based on our analysis of the target audience for the MR project. Although the overall profiles developed by our team and the project developers fell into two broad groups (those technically savvy and those who are not), the rapid turn-around time forced us to conduct this first phase test on relatively savvy participants. When the project goes further, it will be vital to recruit a wide range of users and test the project on a wide range of browsers and devices so that we can ensure a good user experience. Even though the current study's user pool is less heterogeneous than we would like, we learned a great deal about some weaknesses in the design of the project as it currently stands (an outcome we consider to be very positive).

The test consisted of five participants: 4 graduate students and 1 faculty member from UA Little Rock, all female and all experienced in mapping applications, web usage, and general computer usage.

All participants signed a consent form (appendix A).

Test Environment

Since we were more concerned with qualitative data during this phase, we focused our attention largely on what the user said. We asked users to think aloud during the test and to point to the screen with either their hand or the computer's mouse as they navigated the project. In order to capture this data, we captured both the computer screen and the participant using a webcam within Zoom.

The tests were conducted on a Dell desktop machine with a flat-panel monitor using Chrome, version 77.0.3865.120 (64-bit). Screen resolution for these machines was set at 1920 x 1080 pixels to provide an optimal view of the web site and allow for the greatest readability of the site.

The developers were modifying the project during our test, which is not ideal, but not terribly harmful at this early stage, either. We did notice that some features seemed to work better in the Chrome browser and some better in the Edge browser. As we go forward, the development team will need to establish hardware and software requirements so that we can ensure the best user experience possible.

APPENDIX A: CONSENT FORM

We are asking you to participate in a study that involves research. The research experiment is entitled "Usability Testing Mapping Renewal" and it is being overseen by Dr. Joyce Carter. Dr. Carter will answer any questions that you have about the study, which is being conducted under the CRUX Lab's human subjects proposal #19-010. If you have any questions regarding this action, please contact the Research Compliance Officer at 569-8657 or via email at irb@ualr.edu.

The purpose of this experiment is to understand what usability problems you encounter when using the Mapping Renewal project for locating, selecting, and using textual and visual information. During this study, you will be asked to use the project's web page and to perform tasks that resemble real-case scenarios when locating, selecting, and using them. At times you may be asked questions for clarification purposes. Audio and video recording will be used to capture quantitative and qualitative data, such as task performance, number of errors encountered, and personal perspectives about the product. The findings from this study will be used to provide recommendations for improving the project. You will not be asked to reveal any personal information during the course of this study.

Participation in this experiment is voluntary. Refusal to participate involves no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits.

Only Dr. Carter, her co-PI's, and her research assistants will have access to the data collected during this experiment. To ensure confidentiality, data will be stored in a locked office.

By signing this form, you give your permission for my team and me to use your recorded voice, verbal statements, and the session recording for research purposes.

This experiment will not exceed 45 minutes. Given the nature of the experiment, we do not anticipate any risks being associated with this research.

This data will help us to provide recommendations for improving the design and usability of the project.

Signature of Participant:

_____Date_____

APPENDIX B: SCENARIO AND TASKS

Thank you for agreeing to participate in this user study. My name is Joyce Carter, and I'll be working with you today.

In this study, we're going to look at a new tool to help students write and think about writing topics. The project is what we call "low-fidelity," which means it doesn't have a full set of working features, but rather contains some ideas about functionality that the designers would like to test. Your responses (both actions that you take, as well as what you say during the test) are valuable information to help improve this early-stage project.

Okay, let's talk about how we would like to work with you this session. I'd like to position myself here, and record your activity on the computer. I may also make notations in my notebook as well.

I'm going to give you this series of tasks to perform, with a scenario to explain why you are doing these tasks. As you work, feel free to perform whatever tasks you think are appropriate, whether they are related to our products, to computers, or not. I can try to provide anything you might feel is missing. What I'd like you to do, though, is to talk out loud about the things that you are thinking, doing, feeling and expecting.

I'm going to ask you to think aloud while you do the test, which means that as you are doing a task that I ask, I'll ask you to also say what you're thinking, what you're looking for, what you think you're doing. If you go quiet for a while, I may prompt you to continue thinking aloud.

For example, if I asked you to figure out when the next New Orleans' Saints home football game is scheduled, using Google Search, I would expect you to say things like "I want to figure out whether the upcoming Saints game is at noon, 3:00 p.m., or at night, so I'm typing in the Search box 'NFL Saints Schedule' and clicking "Google Search." Next, I'm skimming the results to see if I can find Oct 27 against the Cardinals. There it is. I can just read the time or I can click on this box to learn more."

It's important for you to know that you are not being tested -- there are no right or wrong steps or actions. We are asking you to be a user to help test this emerging product. If there is a glitch or you don't understand something, that piece of information is really useful to the designers, and that means you are doing a good job. In other words, just be yourself and don't worry about "success" or "failure."

Please feel free to talk about anything you encounter, especially any problems you have during the tasks. I am not the developer of these products —I'm part of an objective evaluation team— so you can feel free to give me your candid opinions. You won't hurt anyone's feelings. Your comments are important, which is why we'll be taking notes and videotaping the session, which also gives us a record of what you're looking at. I'd like to remind you at this time that your name will not be used in our report, and that all information you provide today will be reported anonymously.

I want you to know that you are free to stop or take a break at any time, and that will not affect the consideration we will be providing. Please let me know if you need anything to make yourself more comfortable.

Task 1: Orientation: Map

1. Let's spend some time getting to know this project, and let's begin with the map.

2. Open question: What do you see here and what do you think it does?

3. How would you look at the map at a finer level? (mouse wheel, + or - button)

4. What are these colored blobs with numbers in them? (cognitive question)

5. Click on one, and describe what it does.

6. Please return to a full map of the area? (how do you do that?)

Task 2: Orientation: Commands and Affordances

1. Please look at this icon of a stack of papers. What do you think it does?

2. What about the magnifying glass above it?

Task 3: Click on the layers icon and tell me what you think the buttons do.

1. What is the difference in Annexations and Neighborhoods? Play and describe what you think is going on.

2. When one or both of these commands is chosen, a little box stays open. How does it work? (transparency controls). Play with it and describe what's going on.

3. When either a neighborhood or an annexation is turned on, please find out what one of those areas is called. Do the same for the other mode.

Task 4: How would you find a photograph of a specific address?

1. If hunting and exploring, follow up with "is there another way you could do this?" (looking for search bar)

2. If searching one Search versus the other one, ask to use the other one -- what's the difference in these two searches?

Task 5: specific locations

1. If you wanted to look more closely at the area north of the airport, specifically 2500 E. Capitol Ave, how would you do it? Please find one or more photographs of this location.

2. How many churches have locations in this project?

3. Can you find a photograph of a church?

4. How would you go about finding the Environmental Impact Statement for I-630? Can you locate it and bring it up? How many pages is it? If you find it, could you make a copy on your computer? How?

Potentially relevant terms used in Urban Geography circles - Porter

Agglomeration
Bid-rent curve
Blight
Blockbusting
Boundaries
Built environment
Capitalism
Census block group
Census tract
Central business district
Central city
Central place
Central place system
Centrifugal forces
Centripetal forces
Chain migration
Chicago School (Burgess)
City models (e.g., concentric zone (Burgess), sector (Hoyt), urban realms, multiple nuclei)
City plan
Civil rights
Class
Comparative advantage
Constraints
Consumer services
Corbusier
Core-periphery patterns
Covenants
Crime
Decentralization
Deed covenants
Density
Desegregation
Development
Distance-decay
Doughnut cities
Drive-in culture
Economies of scale
Edge cities
Eminent domain
Ethnic enclave
Ethnicity
Exclusionary zoning
Federal Aid Highway Act (1956, 1962, 1970)
Federal Fair Housing Act
Federal Home Loan Bank Act (1932)
Federal Housing Administration
Filtering
Fordism
Gatekeepers
Gentrification
Gentrified neighborhood
Geography of fear
Gridiron street patterns
Georeferenced
Hinterlands
Historic preservation
Home Owners Loan Corporation (HOLC)
Households
Housing
Housing Act (1949, 1950)
Housing market
Housing authority
Historical GIS
Infrastructure
Intraurban moves
Interstate highway system
Kerner Commission
Landscapes
Land use
Mass transit
Metropolitan ___
Migration
Minorities
Multiplier effects
Neighborhood decay
NIMBYism
Nodal center
Office park
Place
Planning
Planned suburbs
Planning commissions

Poverty
Property rights
Public housing
Public transportation
Pull factors
Push factors
Race
Realtor
Real estate
Real estate agents
Redevelopment
Redlining
Residential segregation
Restrictive deed covenants
Segregation
Slum clearance
Slums
Social gatekeepers
Space
Sprawl
Spatial history
Steering
Suburbs ____
Suburbanization
Tax increment financing
Urban _____
Urban hierarchy
Urban renewal
Urban sprawl
White flight
Zoning
Zoning ordinance